

REMARKS

Claims 2, 4, and 5 has been canceled. Claim 1 has been amended, and new claims 21 and 22 have been added.

Claim 1 has been amended to incorporate the subject matter of claims 4 and 5, except that certain members of the Markush group of claim 5 have been omitted in order to overcome the Examiner's rejections.

The subject matter of claim 2 has been amended to obviate the Examiner's § 112 rejection and to substitute the phrase "a group capable of forming free radicals" with the list of example such groups provided in the original claim 2; the above subject matter has been inserted into new claim 21; and original claim 2 has been canceled.

New claim 21 is an independent claim incorporating the subject matter of claims 1 and 2 as amended.

Claim 3 has been amended to correct dependency following the above amendments.

New claim 22 is an independent claim incorporating the subject matter of claims 21, 7, 11, and 15.

New claim 23 depends on claim 22, with the further limitation that the surface comprises a silicon oxide (as supported in the specification on page 2, line 20) or gold (as supported in the specification on page 4, line 18).

The present amendment adds no new matter to the application.

The Rejections

Claim 2 stands rejected under 35 U.S.C. § 112, second paragraph, as indefinite.

Claims 1, 4, and 5 stand rejected under 35 U.S.C. § 102(b) as anticipated by each of the following references individually: Zalipsky (Bioconjugate Chem. (1995) vol. 6, pp. 150-165, hereinafter "Zalipsky"); Behringwerke Aktiengesellschaft (WO 99/07744, hereinafter "Behringwerke"); Bertozzi et al. (J. Organic Chem., (1991) vol. 56, pp. 4326-4329, hereinafter "Bertozzi"); Konica Corp. (JP 08-220673, hereinafter "Konica"); and Becton, Dickinson (WO 99/172120, hereinafter "Becton").

Claims 2 and 6-20 stand rejected as anticipated under 35 U.S.C. § 102(b), or as unpatentable under 35 U.S.C. § 103(a), with regard to Becton.

Claims 2, 3, and 6-20 stand rejected as anticipated under 35 U.S.C. § 102(b), or as unpatentable under 35 U.S.C. § 103(a), with regard to Zalipsky.

Claims 6-20 stand rejected as unpatentable under 35 U.S.C. § 103(a) with regard to Bertozzi alone, or in combination with each of Zalipsky or Becton.

Claims 6-20 stand rejected as anticipated under 35 U.S.C. § 102(b), or as unpatentable under 35 U.S.C. § 103(a), with regard to Behringwerke.

Claims 1-13, 15, and 17-20 stand rejected under 35 U.S.C. § 102(b) as anticipated under 35 U.S.C. § 102(b), or as unpatentable under 35 U.S.C. § 103(a) as being obvious over Genset (WO 95/01987, hereinafter "Genset").

In view of the present amendment, Applicants respectfully traverse the present rejections and request reconsideration and allowance of the remaining claims for the following reasons.

Applicant's Arguments

As an initial matter, Applicants note that certain of the 103(a) rejections use the combination of a single reference and what the Examiner asserts to be known or obvious in the art. Namely, in the Office Action dated September 3, 2003, the following rejections contain such assertions:

- (1) the rejection of claims 7, 9-10, and 20 as unpatentable over Becton (Office Action, pp. 3-4)
- (2) the rejection of claims 3, 7, 10, and 20 as unpatentable over Zalipsky (Office Action, p. 4)
- (3) the rejection of claims 6-20 as unpatentable over Bertozzi (Office Action, p. 5)
- (4) the rejection of claims 6-20 as unpatentable over Behringwerke (Office Action, pp. 5-6).
- (5) the rejection of claims 2-5, 8-11, 15, and 17-20 as unpatentable over Genset (Office Action, p. 6).

In regard to certain claims in some of the above-listed rejections under § 103, although the Examiner may make no mention of obvious knowledge or conventional techniques in the art, the Examiner provides only a single reference which fails to teach all of the requisite elements of the claim. In such instances Applicants can only assume from

the language of the rejection that the Examiner asserts the existence of applicable prior art teaching the remaining elements. All of the above-listed assertions appear to be official notices, however no concrete evidence is provided. Such assertions must be supported by concrete evidence. In re Zurko, 258 F.3d 1379, 1386, 69 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001). Therefore, Applicants respectfully request withdrawal of all of the above-listed rejections. In the event Applicants have failed to list above other official notices, Applicants hereby object to and request withdrawal of all official notices in the Office Action dated September 3, 2003.

The Examiner has objected to claim 2 under § 112 for including the phrase “such as” and because the Examiner regards the term “anthrathione” as unclear. The phrase “such as” has been removed from the subject matter of claim 2 (now cancelled). Regarding “anthrathione,” Applicants are filing currently with this Amendment an Information Disclosure Statement citing an article from the well-known Journal of the American Chemical Society using the term “anthrathione.” The cited reference makes clear that “anthrathione” refers to thiol substitution of anthrone.

Regarding the rejection of claim 5, none of the references employed against the claim (Zalipsky, Behringwerke, Bertozzi, Konica, Becton, or Genset) teach that “Z is a reactive group capable of covalently binding to a biomolecule, is capable of nucleophilic substitution reactions, nucleophilic addition reactions, Diels-Alder reactions or radical substitutions, and is selected from the group consisting of a diene group, a dienophilic group, an aldehyde group, a hydroxyl group, a carboxylic acid group, an active ester group, an amino group, a thiol group, an aziridine group, an isocyanate group, an isothiocyanate group, an azide group, and a reactive leaving group” in the context of base claim 1 (as previously presented). As currently amended, claim 1 and new claims 21 and 22 each incorporates the subject matter of previously presented claim 5 and intervening claim 4. Therefore, because the references do not teach all of the requisite elements, claim 1 as amended is allowable.

Becton teaches preparation of conjugates using polyethylene glycol linkers. Contrary to the Examiner’s assertion (Office Action dated Sept. 3, 2004, p. 4, lines 1-2), Becton does **not** teach the “specifically interacting binding partners” of claims 11-14 of the present invention, but rather merely recites “proteins and nucleic acids” including

oligonucleotides and antibodies (Becton, claims 7-10). Becton does even remotely teach the “peptide nucleic acid/nucleic acid, enzyme/substrate, receptor/effector, lectin/sugar, . . . , avidin/biotin or streptavidin/biotin” specific interactions as disclosed in claim 11, on which claims 12-14 depend. For these reasons, Applicants respectfully traverse the rejection of claims 11-14 over Becton.

Zalipsky teaches functionalized polyethylene glycol for preparation of biologically related conjugates. Regarding the rejection of claim 2, Zalipsky fails to teach, or even suggest, “reactive group X is selected from the group consisting of a SiW_3 group with W being a hydrolyzable atom or group, an anthrathione group or a derivative thereof, an anthraquinone group or a derivative thereof, and a benzophenone group or a derivative thereof” along with the elements of base claim 1, as disclosed in instant claim 2 as amended, and in each of new claims 21 and 22. Therefore Applicants respectfully traverse the rejection of claim 2 over Zalipsky.

Further regarding Zalipsky, and contrary to the Examiner’s assertion (Office Action dated Sept. 3, 2004, p. 4, final paragraph), Zalipsky does not teach the subject matter of claims 11-19. The introductory paragraph of the reference describes clinical applications involving blood contact wherein Zalipsky asserts an appropriateness for polyethylene glycol (Zalipsky, p. 150), and does not teach, or even suggest, a “specifically interacting system of binding partners” as disclosed in present claim 11, and in each of new claims 21 and 22. The next to last paragraph of p. 150 and Table 1 of Zalipsky teach various classes of polyethylene glycol conjugates, and fail to teach a “process for the detection of a biomolecule which is a partner of specifically interacting system of binding partners” as disclosed in present claim 15. Therefore, Applicants respectfully traverse the rejection of claims 11-19 over Zalipsky.

Bertozzi teaches bifunctional polyethylene glycol derivatives. The Bertozzi reference fails to overcome the deficiencies in the references as discussed above.

Behringweke teaches polysaccharide conjugates of biomolecules, a dextran support, and certain specific binding pairs. Contrary to the Examiner’s assertions (Office Action dated September 3, 2004, page 6, lines 2-6), Behringweke fails to teach, or even suggest patterned arrays. Behringweke otherwise fails to overcome the deficiencies in the

references as discussed above. For all of the above reasons, Applicants respectfully traverse the Behringwerke rejections to the claims.

Genset teaches use of compounds as solid supports for nucleic acid synthesis (English-language Abstract). Contrary to the Examiner's assertions (Office Action dated September 3, 2004, page 6, lines 15-23), Genset fails to teach, or even suggest, a specifically interacting system, isolation of biomolecules, or patterning of an array on a surface. When the PTO asserts that there is an explicit or implicit teaching in the prior art, it must indicate where such a teaching or suggestion appears in the reference. In re Rijckaert, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993) (citation omitted). Moreover, the Genset reference fails to overcome the deficiencies in the references as discussed above. For all of the above reasons, Applicants respectfully traverse the Genset rejections to the claims.

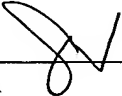
Conclusion

For all of the above reasons, claims 1, 3, and 6-23 are now in condition for allowance. Therefore, Applicants respectfully request reconsideration of the application, and a prompt notice of allowance is earnestly solicited.

Questions are welcomed by the below-signed attorney for applicant.

Respectfully submitted,

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